REMARKS

The Office examined claims 1-52, allowed claims 1-34--except for rejections of various of claims 1-34 (and others) under 35 USC section 112, second paragraph--rejected claims 35, 41 and 47, and objected to claims 36-40, 42-46, and 48-52. This paper amends the claims in respect to the rejections under 35 USC section 112, second paragraph, and also amends claims 35, 41 and 47, leaving claims 1-52 in the application.

Rejections under 35 USC §112, second paragraph

At section 3 of the Office action, various of the claims are rejected under 35 USC §112, second paragraph, because of using the phraseology "or similar operation." With this paper, that phraseology is replace with "or neighbor multiplication." Support is provided at page 19, line 31.

Also at section 3 of the Office action, claims 35, 41 and 47 are rejected under 35 USC §112, second paragraph, because of using the phraseology "may depend." With this paper, that phraseology is eliminated from the claims.

Accordingly, applicant respectfully requests that the rejections under 35 USC §112, second paragraph, be reconsidered and withdrawn.

Rejections under 35 USC §102

At section 5 of the Office action, claims 35, 41 and 47 are rejected under 35 USC §102 as being anticipated by U.S. Pat. No. 5,805,017 to Razzell.

Claims 35, 41 and 47 are changed by this paper to make more clear that each is directed to obtaining an estimate of the carrier frequency; to this end, the terminology "signal acquisition" has been replace with simply "providing an estimate of the carrier frequency."

The invention as in claims 35, 41 and 47 is distinguished from Razzell in at least two ways. First, Razzell does not teach or suggest a method or apparatus for obtaining an estimate of the carrier frequency of a signal having a carrier component at a carrier frequency and a data component, but instead teaches obtaining the frequency of a FSK (frequency shift keyed) signal. Such a signal does not have a data component in addition to a carrier frequency. Instead, such a signal conveys information by frequency shift keying--i.e. changing frequency from one to another of a finite set of frequencies--and Razzell teaches only how to determine which of the finite set of frequencies is being received, and so what data is being communicated. The decision stages 26 28 of Fig. 4 produce (provide a decision on) the data being communicated. Second, and relatedly, there is no step of data wipe off. If the multiplier 12 of Razzell were to actually be part of a process of data wipe off, then the decision stages 26 28 could not provide a decision on the data being communicated. (Data wipe off is explained in the application at e.g. page 7 in the paragraph beginning at line 10.)

Accordingly, applicant respectfully requests that the rejections under 35 USC §102 based on Razzell be reconsidered and withdrawn.

Also at section 5 (should be section 6) of the Office action, claims 35, 41 and 47 are rejected under 35 USC §102 as being anticipated by U.S. Pat. No. 6,154,487 to Murai et al.

The invention as in claims 35, 41 and 47 is distinguished from Murai in at least two ways also. First, like Razzell, Murai also does not teach or suggest a method or apparatus for obtaining an estimate of the carrier frequency of a signal having a carrier component at a carrier frequency and a data component. In the case of Murai, what is taught instead is obtaining synchronization with the PN (pseudo-noise) code of a DS CDMA signal. Secondly and

relatedly, there is no indication that a data wipe off process is being performed. The Examiner refers to Fig. 6, elements 50 and 52, in grounding the rejections. Murai explains at col. 30, line 27, that those elements are explained in more detail in the description of Fig. 22, which reads in part (at col. 30, line 30):

> The synchronization-acquiring unit of FIG. 22 calculates correlation of a received signal (which is input with an oversampled-by-two accuracy as shown in FIG. 23) with the pseudo-noise code by repeating the same code twice.

Further, Murai explains that the input to elements 50 (the squaring modules) are a correlation, not the signal itself (and the squaring yields a correlation power, as explained at col. 30, line 55). There is no indication there or in all of the voluminous description of Murai that the multiplications by elements 50A 50B is part of a data wipe-off process, and indeed, since, as in Razzell, Murai is after determining what the data is that is being communicated at the stage in the receiver where elements 50A 50B are located, a data wipe off process at this stage in the receiver (the spread spectrum IF receiver stage 18, as shown e.g. in Fig. 16) would be self-defeating. In corroboration, Razzell shows no corrections/ inputs to the RF oscillator 14 in Fig. 16, which is supposed to provide a signal at the carrier frequency. (As a practical matter, acquiring a signal in the sense used in the claims, i.e. obtaining the carrier frequency, is more of an issue in some kinds of receivers, such as ranging receivers, than in others, such as receivers used in cellular telephones. In the case of ranging receivers, the sender of the signal being received may be moving very fast toward or away from the receiver, with the result that the carrier frequency undergoes a significant Doppler shift. In the case of a cell phone communicating with a base station, there is usually no such significant Doppler shift. Thus, it makes sense for Murai to describe a receiver in which differences between the local oscillator frequency and the carrier frequency are ignored or dealt with indirectly. Murai teaches

accounting for the differences indirectly in PN acquisition and tracking modules, such as the continuous high-accuracy acquiring means 232 of Fig. 6.)

Thus, although Murai shows a squaring operation, it is not part of a data wipeoff operation (and is not a squaring of a signal, but instead a squaring of a correlation result, so as to provide a correlation power), and further there is not step of providing an estimate of the carrier frequency including a step of data wipeoff.
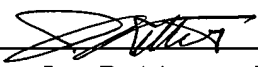
Accordingly, applicant respectfully requests that the rejections under 35 USC §102 based on Murai be reconsidered and withdrawn.

Conclusion

For all the foregoing reasons it is believed that all of the claims of the application are in condition for allowance and their passage to issue is earnestly solicited.

Respectfully submitted,

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